

Indo-Pacific Session Looks at Complex EM Operating Environment

Thursday's symposium program at AOC 2025 included a session on EMSO in the Indo-Pacific region. Led by moderator Scott "Sherm" Oliver, who serves on the AOC Board of Directors, the session offered a Taiwanese perspective on the topic from Dr. Chen-Yi "Crystal" Tu, Assistant Research Fellow, National Defense and Security Research in Taipei. Dr. Nathan Mintz followed with a discussion on the importance of generating EW "mass" in the battlespace.

Dr. Tu began by explaining the region in terms of population and geography. She illustrated the density of the region with the Valeriepieris Circle, which encompasses nations such as India, China, Indonesia, the Philippines, Japan, and South Korea (essentially 10% of the Earth's land). She explained that more people live inside this circle than outside it. Despite the vast distances of Indo-Pacific region, its population density makes for a complex electromagnetic operational environment.

She also provided some interesting perspectives on China's strategic situation. In 2035, China's population will have aged so much (30% of the population will be 60 or older, due to the demographic implications of its one-child policy) that it will deplete the government's national pension fund. This factor, chief among others, is creating a strong sense of urgency for the CCP leadership to force Taiwan back into its political system within the next 10 years, for fear that it will not be able to maintain a military capable of invading Taiwan after 2035.

Dr. Tu also discussed China's government and military. She

said that the PLA is a learning organization that has studied the “American way of war” very closely since Operation Desert Storm in 1991. It also sees adversary capabilities in terms of integrated systems rather than weapons platforms, and it prefers to think in terms of “system confrontation” and “system destruction.” It also understands that almost all military systems – its own and its adversary’s – depend on the EMS, which drives considerable interest and investment in EW capabilities.

She also explained how China’s highly centralized government conducts major changes to its military organization, when it determines new structures are needed. For example, the PLA established its Strategic Support Force (SSF) in 2015, with overall responsibility for EW and cyber operations. In 2024, the PLA determined the SSF was not working as envisioned, and the PLA decided to split it into three independent organizations: the PLA Aerospace Force, the PLA Cyberspace Force, and the PLA Information Support Force.

Dr. Tu also told the audience about Taiwan’s deterrence by denial strategy and its requirement to educate its people about EMSO and to develop EMS resilience across its society in the face of Chinese aggression. She said the government has recently proposed a special US\$40 billion (NT\$1.25 trillion) supplemental defense budget for the period 2026-2033. This is likely to include massive drone production programs and represents an opportunity to “democratize” EMSO throughout the Taiwanese forces.

Dr. Mintz discussed the ways that countries are rethinking their approach to EW – evolving from dependence on a small number of exquisite EW capabilities to the mass production of drones and EW payloads for those drones. This transition to “mass” drone and EW production is seen as a viable way to deter and respond to China’s regional aggression.

As a CEO of a new EW company, he spoke about the need to

evangelize about EW to investors, to military leaders, and to policy makers. These leaders need to understand how EMSO is changing and how permissive Electromagnetic Operational Environments are becoming much more contested and congested, as seen on the battlefields in Ukraine. This means operational forces must have more robust GPS receivers, radars and radios in order to fight in today's conflicts.

Defense forces must also find ways to move production closer to the edge of the battlespace, and at the same time manufacture systems on a much larger scale than. He explained that one Ukrainian company, for example, manufactures 10,000 jammers per month. While the US has stated plans to buy 150,000 drones next year, one Ukrainian company makes that many drones in a month. He said we need to start thinking more about EW in terms of attritable mass and distributed systems.

Dr. Mintz also addressed the need to improve EW training and push harder to train like we fight. He said we need better EW simulation tools, and we should give more consideration to EW training over the ocean instead of relying heavily on land-based exercises. Finally, he spoke about how EW can change the mindset of commanders if we can show them how effective EW can be as a targeting tool delivering offensive jamming. "EW is going to be where the fight is ultimately decided before a single shot is fired," he said. "I think we need to recognize that and make that point to policymakers where we can."